DETAILED ACTION

1. The following Office Action is in response to the Amendments received September 14, 2009. Claims 1-7 and 9-23 are currently pending.

Claim Objections

2. Claims 1 and 20 are objected to because of the following informalities:

3. In line 14, claim 1, for clarity purposes, please replace "two antenna elements" with –said first and second antenna element--.

4. Claim 20 is objected to for the same reasons as claim 1.

5. Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-3, 5-7, 9-11, 13-15, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Johnson et al.* (US 2003/0032443, hereinafter *Johnson*) in view of *Nevermann* (US 6,980,157, hereinafter).

Claims 1 and 7: *Johnson* teaches an integrated speaker carrier and antenna element for a communication terminal, comprising:

a sheet of a flexible film (15, fig. 2) having a conductive first portion forming a first antenna element; and a speaker (7, fig. 2);

wherein a support structure (18, fig. 2) carrying a second antenna element (Ground Plane) is arranged at a predetermined distance from said first antenna element, which said first and second antenna elements form a spacing (29, fig. 4) for housing the speaker.

Johnson fails to teach an elongated second portion carrying a conductive lead, the elongated second portion including an inner end that is adjacent to the conductive first portion and an outer end that is connected to a speaker, such that the elongated second portion has a length defined by the inner end and the outer end and extends away from the conductive first portion and the inner end to the speaker and the outer end along at least a portion of the length; wherein said elongated second portion is bent such that a primary audio output side of the speaker faces the first portion and that said speaker and said outer end of said elongated second portion are positioned at an aperture in said first portion. However, since it is inherent that the speaker needs to receive audio signals thus inherent that the speaker must be connected to some transmission line, it would be obvious to the skilled artisan at the time of the invention to look for a suitable transmission line for the speaker. *Nevermann* teaches a suitable conductive lead (15, fig. 5) for a speaker combined with a mobile device, such a as cell phone. The claim would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the speaker transmission of *Johnson* with the conductive lead of *Nevermann,* with a reasonable expectation of success, since the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Claim 2: The modified invention of *Johnson* teaches said second portion carries a pair of conductive leads from adjacent said first portion to respective speaker connection pads (18, fig. 5 of *Nevermann*) at said outer end.

Claim 3: The modified invention of *Johnson* teaches said second portion carries at least one conductive lead (15, fig. 5 of *Nevermann*) which is electrically insulated from said first portion.

Claim 5: The modified invention of *Johnson* teaches said conductive lead extends from a connection pad (18, fig. 5 of *Nevermann*) arranged adjacent to said first portion at a straight edge of said flexible film.

Claim 6: *Johnson* teaches said conductive first portion is a ground plane of an antenna for a radio communication terminal (paragraph [0032]).

Claim 9: *Johnson* teaches said flexible film is attached to said support structure such that said conductive first portion is electrically connected to a ground plane of said support structure (paragraph [0032]).

Claim 10: The modified invention of *Johnson* teaches said flexible film is attached at a side edge thereof to said support structure, at which a side edge of a connector pad (17, fig. 5 of *Nevermann*) to said conductive lead is arranged (fig. 2 of *Johnson*).

Claim 11: The modified invention of *Johnson* teaches said connector pad is connected, at said side edge thereof, to speaker control circuitry (The Examiner notes that control circuitry is inherent to process the audio signal of the speaker) arranged on said support structure.

Claim 13: *Johnson* teaches an insulating spacer (14, fig. 2) is arranged intermediate said support structure and said flexible film, defining said predetermined distance between said first and second antenna elements.

Claim 14: *Johnson* teaches said spacer comprises speaker attachment means devised to secure said speaker adjacent to said aperture (paragraph [0027]).

Claim 15: *Johnson* teaches said flexible film is attached to said spacer with an adhesive (paragraph [0026]).

Claim 18: *Johnson* teaches said support structure is a printed circuit board of a radio communication terminal (paragraph [0026]).

Claim 19: *Johnson* teaches a radio communication terminal (1, fig. 1), comprising an integrated speaker carrier and antenna element as recited in claim 1.

8. Claims 12, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Johnson* in view of *Nevermann* and *Gunee* et al. (US 2001/0052879, hereinafter *Gunee*).

Claim 12: The modified invention of *Johnson* teaches all of the limitations of claim 1, as discussed above, however, fails to teach said flexible film is bar soldered at a straight edge to said support structure. However, *Gunee* teaches that it less costly to solder an antenna onto printed circuit boards [0003]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have soldered the antenna of the modified invention of *Johnson* onto the printed circuit board, as taught by *Gunee*, in order to have reduced the cost.

Claim 16: The modified invention of *Johnson* teaches all of the limitations of claim 13, as discussed above, however, fails to teach said spacer is attached to said support structure by cooperating engagement members. However, *Gunee* teaches attaching an antenna to a PCB using

an antenna connector that allows for easy removal [0007], which is desired for mobile phones [0003]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the attaching means of *Gunee* as the cooperating engagement members of the modified invention of *Johnson* in order to have easily removed the antenna.

Claim 17: The modified invention of *Johnson* teaches all of the limitations of claim 13, as discussed above, however, fails to teach said spacer has a protruding member engaging with a recess in said support structure. However, *Gunee* teaches connecting an antenna by engaging protrusions (48) in an antenna connector with recesses (49) in a PCB (fig. 6) in order to increase the attaching force between the antenna and the PCB [0031]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the attaching means of *Gunee* with the invention of the modified invention of *Johnson* in order to have increased the attaching force between the antenna and the PCB.

Allowable Subject Matter

9. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claim 4: Prior art fails to teach, or render obvious, said flexible film is made from an insulating material, and wherein said first conductive portion and said lead form parts of a layer of a conductive material coated on said flexible film.

11. Claims 20-23 are allowed.

12. Claim 20: Prior art, *Johnson* (US 2003/0032443), teaches a method of manufacturing an integrated speaker carrier and antenna element for a communication terminal, comprising: providing a flexible film having a first conductive surface portion forming a first antenna element; attaching a speaker to an outer end of an elongated second potion; forming an aperture in said first portion; and arranging a support structure carrying a second antenna element at a predetermined distance from said first antenna element, the first and second antenna elements forming a spacing for housing the speaker. *Johnson* fails to teach providing a flexible film of an insulating material, having a first conductive surface portion forming a first antenna element, and an elongated second portion having an inner end adjacent to said first portion, said elongated second portion carrying a lead insulated from said first portion; and bending the elongated second portion such that a primary audio output side of the speaker faces the first portion and said speaker and that said outer end of the elongated second portion are positioned at the aperture.

Response to Arguments

13. Applicant's arguments with respect to claims 1-7 and 9-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dufosse et al. (US 7,107,016) teaches an antenna/speaker combined assembly.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT KARACSONY whose telephone number is (571)270-1268. The examiner can normally be reached on M-F 7:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. K./
Examiner, Art Unit 2821

/Hoang V Nguyen/
Primary Examiner, Art Unit 2821